

Quiz 7 Solutions

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Note: 65.128.0.127 was changed to 65.128.0.126, because it was not intended to be the broadcast address.

1. Your IP Address is 65.128.0.39/25 and your subnet mask is 255.255.255.128, and the subnet address would be 65.128.0.0. If your IP and the IP that you are sending to have the same subnet address, then they are on the same network.

The IP address for the first datagram is 65.128.0.129/25, so the subnet mask is 255.255.255.128 and the subnet address is 65.128.0.128. This is not the same as your subnet address, so no it is not on the same network.

The IP address for the second datagram is 65.128.0.126/25, so the subnet mask is 255.255.255.128 and the subnet address is 65.128.0.0, so yes this IP is on your network.

2. You must use ARP and using the destination MAC FF:FF:FF:FF:FF:FF (broadcast MAC).
3. The first MAC address (00:32:5D:3C:54:FA) is from when you sent to the IP that was not on your network, so that MAC address is from your gateway router. The second MAC address (00:F3:D1:09:11:A0) is from when you sent to the IP that was on your network, so that MAC address is from the machine with IP address 65.128.0.126/25.

4.

First Datagram			
D MAC	S MAC	S IP	D IP
the router (00:32:5D:3C:54:FA)	your computer (00:32:5D:F8:00:31)	your computer (65.128.0.39)	recipient computer (65.128.0.129)
Second Datagram			
D MAC	S MAC	S IP	D IP
recipient computer (00:F3:D1:09:11:A0)	your computer (00:32:5D:F8:00:31)	your computer (65.128.0.39)	recipient computer (65.128.0.126)